

## REMARKS

In the Office Action mailed from the United States Patent and Trademark Office December 19, 2005, the Examiner rejected claims 10, 28, and 51 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Examiner also rejected claims 1-7, 12-14, 16-22, 24-26, 29-34, 37-39, 43-45, 47-49, 52, 53, and 56-58 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,505,409 to Wells et al. (hereinafter “Wells”) and claims 1-14, 16-22, 24-43, 45, 47-53, and 56-58 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,133,519 to Falco (hereinafter “Falco”). The Examiner rejected claims 54 and 55 under 35 U.S.C. § 103(a) as being unpatentable over either one of Wells or Falco and rejected claims 15, 23, and 46 under 35 U.S.C. § 103(a) as being unpatentable over Wells in view of U.S. Patent No. 5,540,406 to Occhipinti (hereinafter “Occhipinti”). Accordingly, Applicants respectfully provide the following:

### Claim Rejections under 35 U.S.C. § 112:

Applicants have addressed each of the concerns identified by the Examiner by amending claims 10, 28, and 51 in order to definitely and particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended to remove the indefinite language referred to by the Examiner regarding the “direction” of the flow regulator. Regarding how the flow regulator can align with a “point,” Applicants refer to the language of MPEP 2173.01, where it states:

A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification.

In this regard, Applicants note that the “optimal pressure recovery point” has been amply defined in the specification and does not mean a one-dimensional point as appears to have been understood by the Examiner (see, for example, pages 20-21 of the specification as filed). One of skill in the art will readily understand that the “optimal pressure recovery point” refers to the curvilinear line along the surface over which the fluid flows where adverse pressure creates unwanted drag (see last full paragraph of page 20). Thus, applicants respectfully submit that the remaining language is definite and particularly points and distinctly claims what Applicants regard as the invention. Applicants therefore respectfully request removal of the rejection.

Claim Rejections under 35 U.S.C. § 102(b):

M.P.E.P. 2131 sets forth the standard for a rejection of a claim as anticipated under 35 U.S.C. § 102. “To anticipate a claim, the reference must teach every element of the claim.”

M.P.E.P. 2131 states further,

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). . . . “The identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants respectfully submit that the reference(s) cited by the Examiner fail to teach every element of the claim set as provided herein for the following reasons.

Every independent claim, namely claims 1, 21, 31, 32, 38, 43, 56, and 57, have been amended to include language stating that the pressure recovery drop is “located proximate an optimal pressure recovery point.” This limitation is taught by the specification as filed (see first full paragraph of page 18) but is not taught by either Wells or Falco.

Referring first to Wells, Wells teaches placement of a step in two ways. The first is placement directly at the leading edge of the fuselage following the nose cone (see Fig. 1, Col. 1 lines 57-64, Col. 3 lines 26-30). The second method of placement of steps taught by Wells is *mutually-spaced* steps extending along the wing or fuselage (see Figs. 3 & 4, Col. 2 lines 9-22, Col. 3 lines 55-59, and Col. 4 lines 13-18). Wells makes clear that no determination of the optimal placement of any steps is contemplated. Specifically, Wells states: “As will be obvious to those skilled in the art . . . the steps will . . . be disposed in a mutually spaced arrangement,” (Col. 4 lines 13-16) indicating that Wells did not recognize nor teach the advantage gained in the present invention by the calculation of the proper placement of the claimed pressure recovery drop.

Similarly, Falco fails to teach this claimed limitation. Falco teaches entirely coating a surface with “microsteps” that are on the order of height of 0.0015 mm to 0.75 mm and regularly spaced on the order of 0.03 mm to 15 mm apart (see Col. 3 lines 47-55). It is for this reason that Falco’s disclosure is so aptly named “microsteps.” However, on this scale of manufacture, anything other than regularly spaced microsteps is impractical at best. Thus the microsteps taught are similarly regularly spaced (see, for example, Figs. 2, 3, and 4-6). Falco describes the most irregular-looking microsteps disclosed (Fig. 11) as forming a surface that “resembles the skin of a scaled fish” (Col. 5, lines 15-20), showing the regularity of the microsteps envisioned and taught. Quite simply, this system cannot provide for locating the claimed pressure recovery drop “proximate an optimal pressure recovery point,” as claimed. Instead, Falco teaches putting microsteps everywhere, with no calculation of the proper or most effective location of the claimed pressure recovery drop.

Therefore, the cited references fail to teach every limitation claimed in independent claims 1, 21, 31, 32, 38, 43, 56, and 57, as is required for a rejection under 35 U.S.C. § 102. Because all the other claims depend from these claims, they are allowable for at least the same reasons. Therefore, Applicants respectfully submit that the claim set provided herein overcomes the references cited by the Examiner and respectfully request removal of the rejections.

Claim Rejections under 35 U.S.C. § 103(a):

The standard for a Section 103 rejection is set forth in M.P.E.P 706.02(j), which provides:

To establish a prima facie case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Applicants respectfully submit that the references cited by the Examiner do not teach or suggest the limitations claimed in the present invention.

Specifically, as discussed above, neither Wells nor Falco teach the limitation of locating the pressure recovery drop proximate an optimal pressure recovery point. Occhipinti also fails to teach or suggest this limitation. Because the reference or references relied on by the Examiner fail to teach this limitation of the claims incorporated through dependency in the rejected claims, Applicants respectfully submit that the rejections under Section 103 have been overcome. Applicants therefore respectfully request removal of the rejections. Accordingly, Applicants

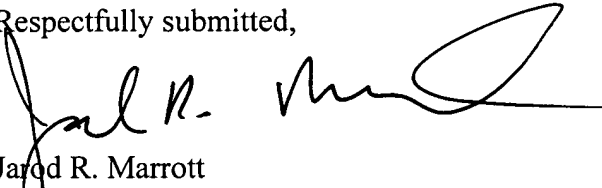
respectfully submit that the presently amended claim set of the present invention is novel and non-obvious.

#### CONCLUSION

Applicants submit that the amendments made herein do not add new matter and that the claims are now in condition for allowance. Accordingly, Applicants request favorable reconsideration. If the Examiner has any questions or concerns regarding this communication, the Examiner is invited to call the undersigned.

DATED this 21 day of April, 2006.

Respectfully submitted,



Jared R. Marrott  
Attorney for Applicant  
Registration No. 54,294

KIRTON & McCONKIE  
1800 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111  
Telephone: (801) 321-4814  
Facsimile: (801) 321-4893

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